

IPIECA Workshops
Washington D.C., 26 September 2006

Introduction to Workshops

Dr. Haroon S. Kheshgi
Corporate Strategic Research
ExxonMobil Research & Engineering Company



WORKSHOPS

26-28 September 2006
Washington, D.C., USA

26 September 2006

Natural Gas as a Climate Change Solution:

Breaking down the barriers to methane's expanding role

Methane has the potential to play a significant role in a carbon-constrained energy future as a relatively low-carbon fuel source. While much of the technology necessary to increase the supply of methane to the energy market exists today, the application of that technology faces an array of commercial, political, environmental and social barriers before its full potential can be realised. In addition, continued research and development of the technology necessary to commercialise "unconventional" gas holds the promise of unlocking future reserves.

This one-day workshop will focus on the barriers to bringing methane to market, with attention to both increasing supply and decreasing fugitive methane emissions, on the current strategies for breaching these barriers and on case studies that highlight successful implementation of these strategies.

Co-sponsored by the Methane-to-Markets Partnership, US EPA and IPIECA, this day will serve as an in-depth look at the factors influencing the pace of methane development and delivery and will touch on a number of the themes addressed in the Pace of Technology workshop.



27-28 September 2006

Increasing the Pace of Technology Innovation and Application: *Enabling Climate Change Solutions*

The creation of energy technology options to meet global demand for energy with low greenhouse gas emissions is an essential component of a risk management approach to global climate change. To be effective, the pace of deployment of commercially viable energy technology is an additional, critical factor. This workshop will consider the range of actions and policies to address energy technology in the climate change context: their effectiveness, their depiction in future scenarios, and the implications for business.

This workshop will bring together experts from academia, business, governments, policy makers and international and non governmental organisations to improve understanding of how to increase the pace of technology innovation and application.

The workshop will focus on:

- Energy outlooks and the pace of technological progress
- Technology portfolio strategies to increase the pace of innovation and application
- Opportunities and barriers to technology innovation and diffusion
- Innovation and technology options for efficiency, transport, methane, CO₂ capture and geologic storage and energy supply



For more information on either of these events please contact:

Luke Warren, IPIECA
Climate Change Project Manager
luke.warren@ipieca.org
+44 (0) 20 7633 2388



IPIECA CLIMATE CHANGE WORKING GROUP (CCWG)

Introduction to IPIECA Workshops

- Workshops will bring together experts from academia, business, governments, and international and non-governmental organizations to:
 - Consider how to address barriers to bringing methane to market, with attention to both increasing supply and decreasing fugitive emissions
 - Improve understanding of how to increase the pace of technology innovation and application
- Workshops extends on IPIECA's series of focussed workshops and symposia on issues in Global Climate Change:
 - Socio-economic assessment, 1995
 - Science of climate change, 1995
 - Economics of climate change, 1996
 - Scenarios, 1996
 - Flexible Mechanisms in the Kyoto Protocol, 1998
 - Technology assessment, 2000
 - Long-Term Carbon and Energy Management, 2001
 - Energy, Development and Climate Change, 2002
 - Carbon Dioxide Capture and Geological Storage, 2003
 - Transportation and Climate Change, 2004
 - International Policy Approaches to Address the Climate Change Challenge, 2005

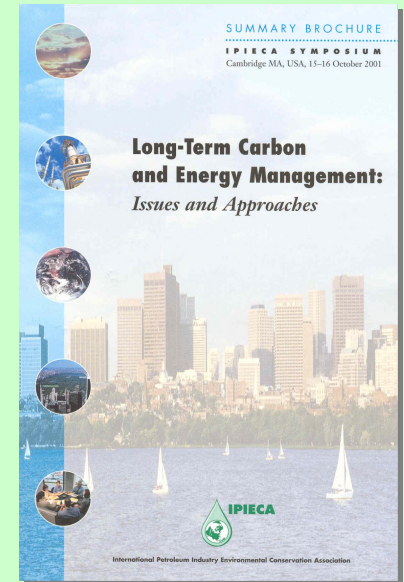
IPIECA CLIMATE CHANGE WORKING GROUP (CCWG)

Workshop Series

Long Term Carbon & Energy Management: *Issues & Approaches*

- **Cambridge, Massachusetts, USA, 15-16 October 2001**

- **“...no single technology option is currently envisaged to meet all global energy needs, suggesting a portfolio approach...”**
- **“Long-term strategies should consider all sources of emissions and all options for balancing energy supply and carbon management while providing for everyone’s energy needs.”**
- **“Infrastructure for the forecasted rapid growth in the demand for natural gas will need to be constructed.”**



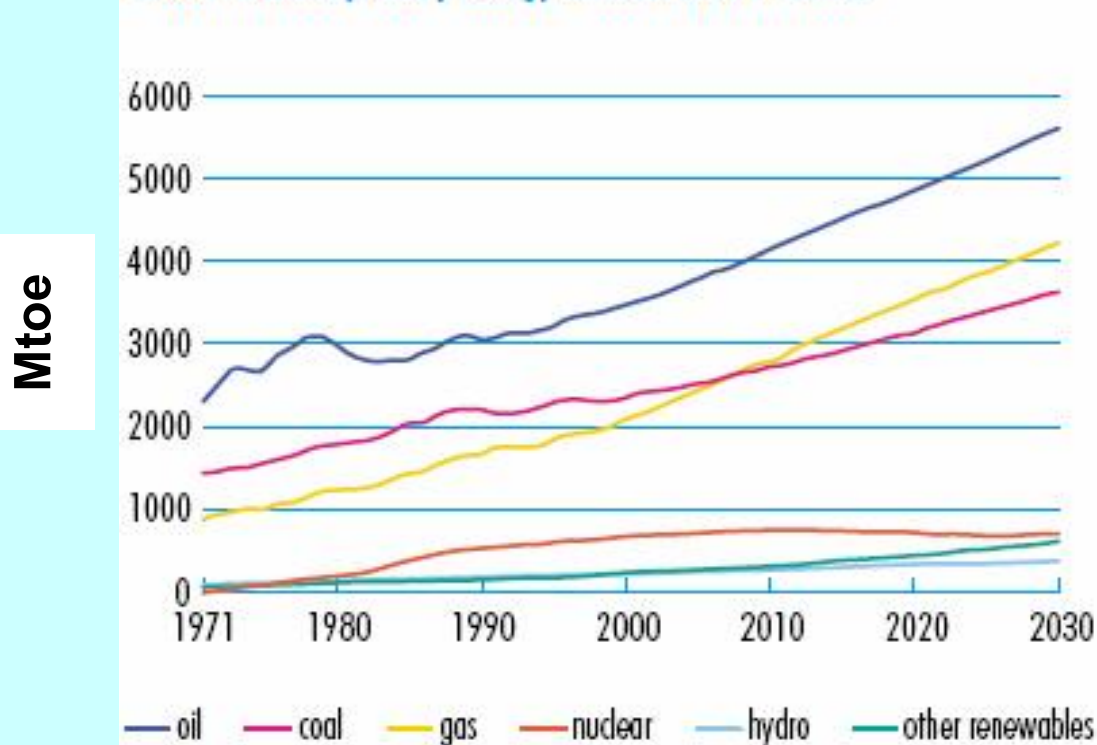
IPIECA CLIMATE CHANGE WORKING GROUP (CCWG)

Workshop Series

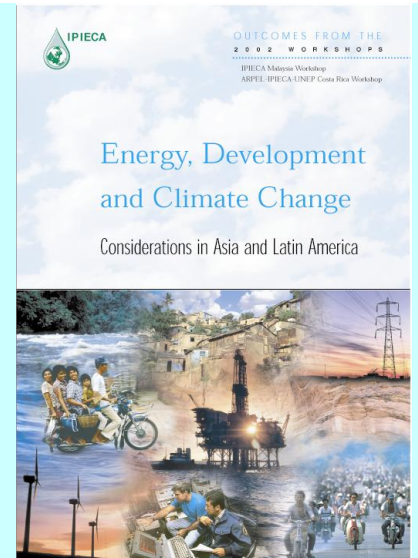
Energy, Development and Climate Change: *Considerations in Asia and Latin America*

- Kuala Lumpur, Malaysia, 25-26 September 2002
- San Jose, Costa Rica, 2-4 December 2002

Trends in world primary energy demand (1971–2030)¹

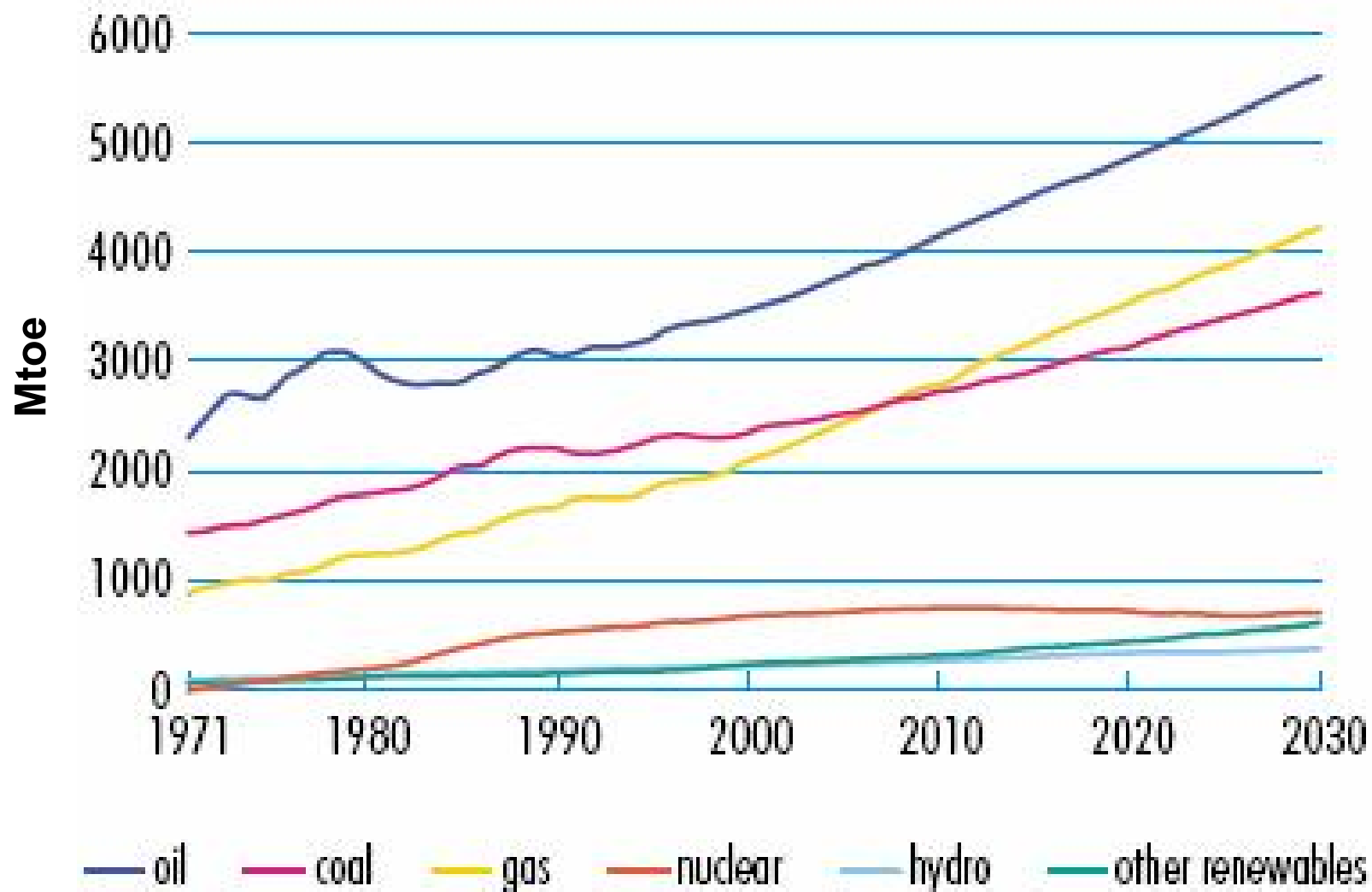


¹ Diagrams based on data from the OECD/IEA *World Energy Outlook 2002* (World Primary Energy Demand © OECD/IEA 2002)



Energy Demand Forecast: Reference Case

Trends in world primary energy demand (1971–2030)¹

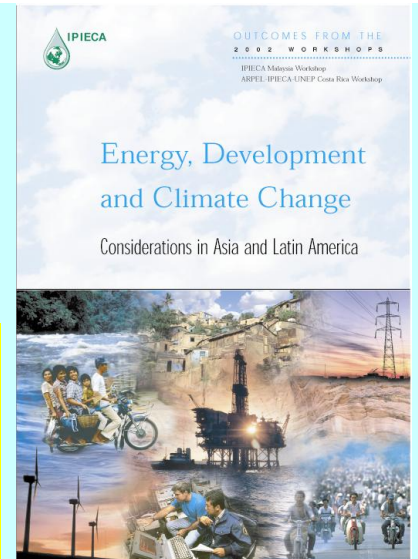


IPIECA CLIMATE CHANGE WORKING GROUP (CCWG)

Workshop Series

Energy, Development and Climate Change: *Considerations in Asia and Latin America*

- Kuala Lumpur, Malaysia, 25-26 September 2002
 - San Jose, Costa Rica, 2-4 December 2002
- “The oil and gas industry is particularly well suited to deploying large scale projects with significant emissions reduction potential. Examples include:
 - Energy efficiency improvements;
 - Utilization of associated gas previously flared;
 - Large-scale fuel switching projects (e.g. coal to oil and natural gas);
 - Methane venting; and
 - Carbon dioxide capture and storage.”
 - “Investment in CDM will, however, be dwarfed by the overall investment in energy, especially in Asia, through to the end of the Kyoto Protocol’s first commitment period in 2012.”





WORKSHOPS

26-28 September 2006
Washington, D.C., USA

26 September 2006

Natural Gas as a Climate Change Solution:

Breaking down the barriers to methane's expanding role

Methane has the potential to play a significant role in a carbon-constrained energy future as a relatively low-carbon fuel source. While much of the technology necessary to increase the supply of methane to the energy market exists today, the application of that technology faces an array of commercial, political, environmental and social barriers before its full potential can be realised. In addition, continued research and development of the technology necessary to commercialise "unconventional" gas holds the promise of unlocking future reserves.

This one-day workshop will focus on the barriers to bringing methane to market, with attention to both increasing supply and decreasing fugitive methane emissions, on the current strategies for breaching these barriers and on case studies that highlight successful implementation of these strategies.

Co-sponsored by the Methane-to-Markets Partnership, US EPA and IPIECA, this day will serve as an in-depth look at the factors influencing the pace of methane development and delivery and will touch on a number of the themes addressed in the Pace of Technology workshop.



27-28 September 2006

Increasing the Pace of Technology Innovation and Application: *Enabling Climate Change Solutions*

The creation of energy technology options to meet global demand for energy with low greenhouse gas emissions is an essential component of a risk management approach to global climate change. To be effective, the pace of deployment of commercially viable energy technology is an additional, critical factor. This workshop will consider the range of actions and policies to address energy technology in the climate change context: their effectiveness, their depiction in future scenarios, and the implications for business.

This workshop will bring together experts from academia, business, governments, policy makers and international and non governmental organisations to improve understanding of how to increase the pace of technology innovation and application.

The workshop will focus on:

- Energy outlooks and the pace of technological progress
- Technology portfolio strategies to increase the pace of innovation and application
- Opportunities and barriers to technology innovation and diffusion
- Innovation and technology options for efficiency, transport, methane, CO₂ capture and geologic storage and energy supply



For more information on either of these events please contact:

Luke Warren, IPIECA
Climate Change Project Manager
luke.warren@ipieca.org
+44 (0) 20 7633 2388



WELCOME TO WORKSHOP PARTICIPANTS FROM TODAY'S IPIECA/EPA WORKSHOP ORGANIZING TASK FORCE

Bruce Wilcoxon, ConocoPhillips (Task Force Chair)

Roger Fernandez, EPA

Russell Jones, API

Haroon Khashgi, ExxonMobil

Terry Killian, Marathon

Andrew Mingst, Chevron

Luke Warren, IPIECA